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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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FENWICK & WEST LLP
SILICON VALLEY CENTER
801 CALIFORNIA STREET
MOUNTAIN VIEW, CA 94041

EXAMINER
KOSSON, ROSANNE

ART UNIT	PAPER NUMBER
1652	

NOTIFICATION DATE	DELIVERY MODE
11/16/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOC@Fenwick.com

Office Action Summary	Application No.	Applicant(s)	
	10/561,108	BURKART ET AL.	
	Examiner	Art Unit	
	ROSANNE KOSSON	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *1* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *30 June 2010*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-86* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-86* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicants' amendment and response to the previous Office action, filed on June 30, 2010 have been received and entered. Upon review and reconsideration of the amended claims, however, it has been determined that the previous Office action is insufficient and incomplete and that a different restriction of the claims is required. Accordingly, the previous Office action is withdrawn and replaced with the following Office action.

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Groups 1-3, claim(s) 1-7, 9-11, 13, 14, 18-20, 77-79, 80 and 82, drawn to a method of detecting a protein of interest by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, digesting the protein of interest with a protease, and labeling the first complex with a radio-labeled coenzyme. In Group 1, the protein of interest/enzyme is a polyketide synthase (PK); in Group 2, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 3, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 4-7, claim(s) 1-11, 13, 14, 18-20, 77-79, 80 and 82, drawn to a method of detecting a protein of interest by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, digesting the protein of interest with a protease, and labeling the first complex with a radio-labeled coenzyme. In Group 4, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 5, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 6, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 7, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 8-10, claim(s) 1-7 and 12-14, 77-79, drawn to a method of detecting a protein of interest by making a first complex comprising a carrier protein bound to a protein of interest and a

second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and labeling the first complex with a radio-labeled coenzyme. In Group 8, the protein of interest/enzyme is a polyketide synthase (PK); in Group 9, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 10, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 11-14, claim(s) 1-8 and 12-14, 77-79, drawn to a method of detecting a protein of interest by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and labeling the first complex with a radio-labeled coenzyme. In Group 11, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 12, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 13, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 14, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 15-17, claim(s) 1-7 and 13-15, 77-79, drawn to a method of detecting a protein of interest by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and contacting the complex of the first and second complexes with coenzyme A or a derivative thereof to form a third complex comprising the carrier protein, the protein of interest, two coenzymes and a label. In Group 15, the protein of interest/enzyme is a polyketide synthase (PK); in Group 16, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 17, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 18-21, claim(s) 1-8 and 13-15, 77-79, drawn to a method of detecting a protein of interest by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and contacting the complex of the first and second complexes with coenzyme A or a derivative thereof to form a third complex comprising the carrier protein, the protein of interest, two coenzymes and a label. In Group 18, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 19, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 20, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 21, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 22-24, claim(s) 1-7, 13, 14, 16 and 17, 77-79, drawn to a method of detecting a protein of interest that is labeled with a phosphotransferase enzyme by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and contacting the complex of the first and second complexes with a phosphotransferase enzyme to form a third complex. In Group 22, the protein of interest/enzyme is a polyketide synthase (PK); in Group 23, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 24, the protein of interest/enzyme is a fatty

acid synthase (FA).

Groups 25-28, claim(s) 1-8, 13, 14, 16 and 17, 77-79, drawn to a method of detecting a protein of interest that is labeled with a phosphotransferase enzyme by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and contacting the complex of the first and second complexes with a phosphotransferase enzyme to form a third complex. In Group 25, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 26, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 27, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 28, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 29-31, claim(s) 1-7, 13, 14, 21 and 22, 77-79 and 83, drawn to a method of detecting a protein of interest and a method of detecting or modulating a function of a label by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and detecting or modulating a function of a label by interacting the label with a secondary molecule. In Group 29, the protein of interest/enzyme is a polyketide synthase (PK); in Group 30, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 31, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 32-35, claim(s) 1-8, 13, 14, 21 and 22, 77-79 and 83, drawn to a method of detecting a protein of interest and a method of detecting or modulating a function of a label by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and detecting or modulating a function of a label by interacting the label with a secondary molecule. In Group 32, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 33, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 34, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 35, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 36-38, claim(s) 1-7, 13, 14 and 23-29, 77-79, drawn to a method of detecting a protein of interest and a method of assembling libraries of enzymes, coenzymes and labels, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, assembling libraries of enzymes, coenzymes and labels, and detecting the transfer of the label from the coenzyme to the carrier protein. In Group 36, the protein of interest/enzyme is a polyketide synthase (PK); in Group 37, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 38, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 39-42, claim(s) 1-8, 13, 14 and 23-29, 77-79, drawn to a method of detecting a protein of interest and a method of assembling libraries of enzymes, coenzymes and labels, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, assembling libraries of enzymes, coenzymes and labels, and detecting the transfer of the label from the coenzyme to the carrier protein. In Group 39, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 40, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 41, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 42, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 43-45, claim(s) 1-7, 13, 14, 23, 30, 69, 77-79 and 86, drawn to a method of detecting a protein of interest inside a cell culture, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and identifying the protein of interest/enzyme in a cell culture. In Group 43, the protein of interest/enzyme is a polyketide synthase (PK); in Group 44, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 45, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 46-49, claim(s) 1-8, 13, 14, 23, 30, 69, 77-79 and 86, drawn to a method of detecting a protein of interest inside a cell culture, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and identifying the protein of interest/enzyme in a cell culture. In Group 46, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 47, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 48, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 49, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 50-52, claim(s) 1-7, 13, 14, 23, 31, 32, 70, 77-79 and 85, drawn to a method of detecting a protein of interest and identifying the protein of interest/enzyme by its molecular weight, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and identifying the protein of interest/enzyme by its molecular weight. In Group 50, the protein of interest/enzyme is a polyketide synthase (PK); in Group 51, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 52, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 53-56, claim(s) 1-8, 13, 14, 23, 31, 32, 70, 77-79 and 85, drawn to a method of detecting a protein of interest and identifying the protein of interest/enzyme by its molecular weight, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second

complex, detecting the carrier protein, which detects the protein of interest, and identifying the protein of interest/enzyme by its molecular weight. In Group 53, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 54, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 55, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 56, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 57-59, claim(s) 1-7, 13, 14, 23, 33 in part and 71 in part, 77-79, drawn to a method of detecting a protein of interest and identifying the protein of interest/enzyme by sequencing the gene encoding the protein, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and identifying the protein by sequencing the gene encoding the protein. In Group 57, the protein of interest/enzyme is a polyketide synthase (PK); in Group 58, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 59, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 60-63, claim(s) 1-8, 13, 14, 23, 33 in part and 71 in part, 77-79, drawn to a method of detecting a protein of interest and identifying the protein of interest/enzyme by sequencing the gene encoding the protein, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and identifying the protein by sequencing the gene encoding the protein. In Group 60, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 61, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 62, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 63, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 64-66, claim(s) 1-7, 13, 14, 23, 33 in part and 71 in part, 77-79, drawn to a method of detecting a protein of interest and identifying the protein of interest/enzyme by sequencing the protein, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and identifying the protein by sequencing the protein. In Group 64, the protein of interest/enzyme is a polyketide synthase (PK); in Group 65, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 66, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 67-70, claim(s) 1-8, 13, 14, 23, 33 in part and 71 in part, 77-79, drawn to a method of detecting a protein of interest and identifying the protein of interest/enzyme by sequencing the protein, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and identifying the protein by sequencing the protein. In Group 67, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 68, the protein of

interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 69, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 70, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 71-73, claim(s) 1-7, 13, 14, 34 and 72, 77-79, drawn to a method of detecting a protein of interest and a method of making the protein of interest/enzyme, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and isolating the protein of interest. In Group 71, the protein of interest/enzyme is a polyketide synthase (PK); in Group 72, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 73, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 74-77, claim(s) 1-8, 13, 14, 23, 34 and 72, 77-79, drawn to a method of detecting a protein of interest and a method of making the protein of interest/enzyme, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and isolating the protein of interest. In Group 74, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 75, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 76, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 77, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 78-80, claim(s) 1-7, 13, 14, 23, 35-37 and 73, 77-79, drawn to a method of detecting a protein of interest and a method of assaying for the expression of the protein of interest/enzyme, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and assaying for the expression of the protein of interest (presumably the group of proteins contains the protein of interest). In Group 78, the protein of interest/enzyme is a polyketide synthase (PK); in Group 79, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 80, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 81-84, claim(s) 1-8, 13, 14, 23, 35-37 and 73, 77-79, drawn to a method of detecting a protein of interest and a method of assaying for the expression of the protein of interest/enzyme, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and assaying for the expression of the protein of interest (presumably the group of proteins contains the protein of interest). In Group 81, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 82, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 83, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 84, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 85-87, claim(s) 1-7, 13, 14, 35 and 36, 77-79, drawn to a method of detecting a protein of interest and a method of assaying for the activity of the protein of interest/enzyme, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and assaying for the activity of the protein of interest (presumably one of the proteins in claim 36 is the protein of interest). In Group 78, the protein of interest/enzyme is a polyketide synthase (PK); in Group 79, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 80, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 88-91, claim(s) 1-8, 13, 14, 35 and 36, 77-79, drawn to a method of detecting a protein of interest and a method of assaying for the activity of the protein of interest/enzyme, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and assaying for the activity of the protein of interest (presumably one of the proteins in claim 36 is the protein of interest). In Group 88, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 89, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 90, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 91, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 92-94, claim(s) 1-7, 13, 14, 23 and 38, 77-79, drawn to a method of detecting a protein of interest and a method of quantifying temporal events related to the expression of the protein of interest, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and quantifying temporal events related to the expression of the protein of interest. In Group 92, the protein of interest/enzyme is a polyketide synthase (PK); in Group 93, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 94, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 95-98, claim(s) 1-8, 13, 14, 23 and 38, 77-79, drawn to a method of detecting a protein of interest and a method of quantifying temporal events related to the expression of the protein of interest, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and quantifying temporal events related to the expression of the protein of interest. In Group 95, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 96, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 97, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 98, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 99-101, claim(s) 1-7, 13, 14, 39 and 40, 77-79, drawn to a method of detecting a protein

of interest and a method of identifying a cell or organism and a stage in the life of the cell/organism, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, marking the protein of interest with the label to identify the cell or organism, and identifying a stage in the life of the cell/organism. In Group 99, the protein of interest/enzyme is a polyketide synthase (PK); in Group 100, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 101, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 102-105, claim(s) 1-8, 13, 14, 39 and 40, 77-79, drawn to a method of detecting a protein of interest and a method of identifying a cell or organism and a stage in the life of the cell/organism, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, marking the protein of interest with the label to identify the cell or organism, and identifying a stage in the life of the cell/organism. In Group 102, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 103, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 104, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 105, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 106-108, claim(s) 1-7, 13, 14, 39, 40 in part and 41, 77-79, drawn to a method of detecting a protein of interest and a method of identifying a cell or organism and the time of infection and level of virulence of the organism, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, marking the protein of interest with the label to identify the cell or organism, and identifying the time of infection and level of virulence of the organism. In Group 106, the protein of interest/enzyme is a polyketide synthase (PK); in Group 107, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 108, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 109-112, claim(s) 1-8, 13, 14, 39, 40 in part and 41, 77-79, drawn to a method of detecting a protein of interest and a method of identifying a cell or organism and the time of infection and level of virulence of the organism, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, marking the protein of interest with the label to identify the cell or organism, and identifying the time of infection and level of virulence of the organism. In Group 109, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 110, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 111, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 112, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 113-115, claim(s) 1-7, 13, 14, 23, 42 and 74, 77-79, drawn to a method of detecting a protein of interest and a method of identifying natural products made by the protein of interest/enzyme, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and identifying natural products made by the protein of interest. In Group 113, the protein of interest/enzyme is a polyketide synthase (PK); in Group 114, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 115, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 116-119, claim(s) 1-8, 13, 14, 23, 42 and 74, 77-79, drawn to a method of detecting a protein of interest and a method of identifying natural products made by the protein of interest/enzyme, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and identifying natural products made by the protein of interest. In Group 116, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 117, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 118, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 119, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 120-122, claim(s) 1-7, 13, 14, 23, 43 and 75, 77-79, drawn to a method of detecting a protein of interest and a method of screening for inhibitors of biosynthetic pathways, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and screening for inhibitors of biosynthetic pathways. In Group 120, the protein of interest/enzyme is a polyketide synthase (PK); in Group 121, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 122, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 123-126, claim(s) 1-8, 13, 14, 23, 43 and 75, 77-79, drawn to a method of detecting a protein of interest and a method of screening for inhibitors of biosynthetic pathways, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and screening for inhibitors of biosynthetic pathways. In Group 123, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 124, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 125, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 126, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 127-129, claim(s) 1-7, 13, 14, 23, 44 and 76, 77-79, drawn to a method of detecting a protein of interest and a method of identifying the protein of interest with a profiler by measuring responses to conditions, by making a first complex comprising a carrier protein bound to a

protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and identifying the protein of interest with a profiler by measuring responses to conditions. In Group 127, the protein of interest/enzyme is a polyketide synthase (PK); in Group 128, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 129, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 130-133, claim(s) 1-8, 13, 14, 23, 44 and 76, 77-79, drawn to a method of detecting a protein of interest and a method of identifying the protein of interest with a profiler by measuring responses to conditions, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and identifying the protein of interest with a profiler by measuring responses to conditions. In Group 130, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 131, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 132, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 133, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 134-136, claim(s) 1-7, 13, 14, 45 in part and 48, 77-79, drawn to a method of detecting a protein of interest and a method of removing chemically the product made by transferring the label, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and contacting the third complex with a chemical reagent to remove the product made by transferring the label. In Group 134, the protein of interest/enzyme is a polyketide synthase (PK); in Group 135, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 136, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 137-140, claim(s) 1-8, 13, 14, 45 in part and 48, 77-79, drawn to a method of detecting a protein of interest and a method of removing chemically the product made by transferring the label, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and contacting the third complex with a chemical reagent to remove the product made by transferring the label. In Group 137, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 138, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 139, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 140, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 141-143, claim(s) 1-7, 13, 14 and 45 in part, 49 and 50, 77-79, drawn to a method of detecting a protein of interest and a method of removing enzymatically the product made by transferring the label, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and

contacting the third complex with a second enzyme to remove the product made by transferring the label. In Group 141, the protein of interest/enzyme is a polyketide synthase (PK); in Group 142, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 143, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 144-147, claim(s) 1-8, 13, 14 and 45 in part, 49 and 50, 77-79, drawn to a method of detecting a protein of interest and a method of removing enzymatically the product made by transferring the label, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and contacting the third complex with a third or fourth enzyme (for the two-enzyme and three-enzyme hybrids, respectively) to remove the product made by transferring the label. In Group 144, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 145, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 146, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 147, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 148-150, claim(s) 1-7, 13, 14 and 46, 77-79, drawn to a method of detecting a protein of interest and a method of irradiating a complex to remove a label, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and irradiating the third complex to remove the label. In Group 148, the protein of interest/enzyme is a polyketide synthase (PK); in Group 149, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 150, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 151-154, claim(s) 1-8, 13, 14 and 46, 77-79, drawn to a method of detecting a protein of interest and a method of irradiating a complex to remove a label, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and irradiating the third complex to remove the label. In Group 151, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 152, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 153, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 154, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 155-157, claim(s) 1-7, 13, 14 and 47, 77-79, drawn to a method of detecting a protein of interest and a method of heating a complex to remove a label, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and heating the third complex to remove the label. In Group 148, the protein of interest/enzyme is a polyketide synthase (PK); in Group 149, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 150, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 158-161, claim(s) 1-8, 13, 14 and 47, 77-79, drawn to a method of detecting a protein of interest and a method of heating a complex to remove a label, by making a first complex comprising a carrier protein bound to a protein of interest and a second complex comprising a labeled coenzyme, binding the first complex and the second complex, detecting the carrier protein, which detects the protein of interest, and heating the third complex to remove the label. In Group 158, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 159, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 160, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 161, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 162-164, claim(s) 51-57, 59, 62-64, 67 and 81, drawn to a microarray comprising a protein of interest bound to a carrier protein, which is bound to a label; a first coenzyme; and a fifth component which is a second coenzyme (coenzyme A). In Group 162, the protein of interest/enzyme is a polyketide synthase (PK); in Group 163, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 164, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 165-168, claim(s) 51-53, 58, 59, 62-64, 67 and 81, drawn to a microarray comprising a protein of interest bound to a carrier protein, which is bound to a label; a first coenzyme; and a fifth component which is a second coenzyme (coenzyme A). In Group 165, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 166, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 167, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 168, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 169-171, claim(s) 51-57, 60-67 and 81, drawn to a microarray comprising a protein of interest bound to a carrier protein, which is bound to a label; a first coenzyme; and a fifth component which is a peptide/protein/enzyme. In Group 169, the protein of interest/enzyme is a polyketide synthase (PK); in Group 170, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 171, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 172-175, claim(s) 51-53, 58, 60-67 and 81, drawn to a microarray comprising a protein of interest bound to a carrier protein, which is bound to a label; a first coenzyme; and a fifth component which is a peptide/protein/enzyme. In Group 172, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 173, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 174, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 175, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 176-178, claim(s) 51-57, 62-67 and 81, drawn to a microarray comprising a protein of

interest bound to a carrier protein, which is bound to a label; a first coenzyme; and a fifth component which is an oligonucleotide. In Group 176, the protein of interest/enzyme is a polyketide synthase (PK); in Group 177, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 178, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 179-182, claim(s) 51-53, 58, 62-67 and 81, drawn to a microarray comprising a protein of interest bound to a carrier protein, which is bound to a label; a first coenzyme; and a fifth component which is an oligonucleotide. In Group 179, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 180, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 181, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 182, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 183-185, claim(s) 51-57, 62-67, 81 and 84, drawn to a microarray comprising a protein of interest bound to a carrier protein, which is bound to a label; a first coenzyme; and a fifth component which is a synthetic receptor. In Group 183, the protein of interest/enzyme is a polyketide synthase (PK); in Group 184, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 185, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 186-189, claim(s) 51-53, 58, 62-67, 81 and 84, drawn to a microarray comprising a protein of interest bound to a carrier protein, which is bound to a label; a first coenzyme; and a fifth component which is a synthetic receptor. In Group 186, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 187, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 188, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 189, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

Groups 190-192, claim(s) 51-57, 62-67 and 81, drawn to a microarray comprising a protein of interest bound to a carrier protein, which is bound to a label; a first coenzyme; and a fifth component which is a carbohydrate. In Group 190, the protein of interest/enzyme is a polyketide synthase (PK); in Group 191, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 192, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 193-196, claim(s) 51-53, 58, 62-67 and 81, drawn to a microarray comprising a protein of interest bound to a carrier protein, which is bound to a label; a first coenzyme; and a fifth component which is a carbohydrate. In Group 193, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 194, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 195, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 196, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-

NRP-FA).

Groups 197-199, claim(s) 51-57, 62-64, 67, 68 and 81, drawn to a microarray comprising a protein of interest bound to a carrier protein, which is bound to a label; a first coenzyme; and a fifth component which is a product of the label following its transfer. In Group 197, the protein of interest/enzyme is a polyketide synthase (PK); in Group 198, the protein of interest/enzyme is a non-ribosomal peptide synthase (NRP); in Group 199, the protein of interest/enzyme is a fatty acid synthase (FA).

Groups 200-203, claim(s) 51-53, 58, 62-64, 67, 68 and 81, drawn to a microarray comprising a protein of interest bound to a carrier protein, which is bound to a label; a first coenzyme; and a fifth component which is a product of the label following its transfer. In Group 200, the protein of interest/enzyme is a hybrid of polyketide synthase and non-ribosomal peptide synthase (PK-NRP); in Group 201, the protein of interest/enzyme is a hybrid of non-ribosomal peptide synthase and fatty acid synthase (NRP-FA); in Group 202, the protein of interest/enzyme is a hybrid of fatty acid synthase and polyketide synthase (FA-PK); in Group 203, the protein of interest/enzyme is a hybrid of polyketide synthase, non-ribosomal peptide synthase (PK-NRP) and fatty acid synthase (PK-NRP-FA).

The inventions listed as Groups 1-203 do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons.

The requirement of unity of invention is not fulfilled because there is no technical relationship among these inventions involving one or more of the same or corresponding special technical features. The expression “special technical features” means those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art. Therefore, a technical relationship is lacking among the claimed inventions involving one or more special technical features. The technical feature that links the 196 groups of inventions is a complex of a protein of interest linked to a carrier protein linked to a label and a coenzyme.

The inventions of Groups 1-203 do not share the common special technical feature of a complex of a protein of interest linked to a carrier protein linked to a label and a coenzyme, because Du et al. ("Biosynthesis of hybrid peptide-polyketide natural products," Curr Opin Drug Discovery and Development 4(2):215-228, 2001), filed in Applicants' IDS of September 11, 2006, disclose a complex of a protein of interest linked to a carrier protein linked to a label and a coenzyme. The label is a polyketide (e.g., an antibiotic), the protein of interest is a ketoacyl synthase, the carrier protein is acyl carrier protein and the coenzyme is acyltransferase. See p. 215, right col., p. 217, and p. 218, left col.

Thus, the technical feature of a complex of a protein of interest linked to a carrier protein linked to a label and a coenzyme does not define the invention over the prior art. Because the common technical feature is not novel (special) with respect to the cited reference, it is clear that the claims of Groups 1-203 lack a single common technical feature that defines them over the prior art.

Further, a national stage application containing claims to different categories of inventions will be considered to have unity of invention if the claims are drawn only to one of certain

combinations of categories:

(1) A product and a process specially adapted for the manufacture of said product; or
(2) A product and process of use of said product; or
(3) A product, a process specially adapted for the manufacture of the said product, and a use of the said product; or
(4) A process and an apparatus or means specifically designed for carrying out the said process; or
(5) A product, a process specially adapted for the manufacture of the said product, and an apparatus or means specifically designed for carrying out the said process (see 37 CFR 1.475(b)-(d)). In the instant case, the claims are drawn to a large multitude of products and processes, only a particular combination of which including Group 1 may be considered for unity of invention, i.e., Group 1 and Group 162, (the first named process of using the product and the first named process). Other groups are drawn to additional products and processes, and other combinations do not comply with the aforementioned Rules. But, because a corresponding special technical feature is not present, Groups 1 and 162 cannot be considered to have unity of invention.

Claim 1 link(s) inventions 1-161, and claim 51 links inventions 162-203. The restriction requirement among the linked inventions is subject to the nonallowance of the linking claim(s). Upon the indication of allowability of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise requiring all the limitations of the allowable linking claim(s) will be rejoined and fully examined for patentability in accordance with 37 CFR 1.104. Claims that require all the limitations of an allowable linking claim will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

Applicant(s) are advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, the allowable linking claim, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows.

A) If Applicants elect any one of the method inventions, any one of Groups 1-161, Applicants must elect one of the carrier proteins listed in claim 4.

B) If the carrier protein elected in (A) is the carrier domain of non-ribosomal peptide synthase (NRP), Applicants must elect one of the activities listed in claim 6.

C) If Applicants elect one of Groups 15-21, Applicants must elect whether the second coenzyme is coenzyme A or a derivative of coenzyme A.

D) If Applicants elect one of Groups 1-7, Applicants must elect in claims 18 and 20 whether the reporter is a reporter (claim 18) or a reporter precursor (claim 20). If Applicants elect the reporter, Applicants must elect one of the reporters listed in claim 18. If Applicants elect the reporter precursor, Applicants must elect one of the reporter precursors listed in claim 20.

E) If Applicants elect one of Groups 1-7, Applicants must elect in claim 19 one of the appendage labels listed in the claim.

F) If Applicants elect one of Groups 29-35, Applicants must elect in claim 22 one of the secondary molecules listed in the claim.

G) If Applicants elect one of Groups 78-84, Applicants must elect in claim 37 whether one protein is assayed or whether a group of proteins is assayed.

H) If Applicants elect any one of the product (microarray) claims, one of Groups 162-203, Applicants must elect in claims 63 and 64 whether the reporter is a reporter (claim 63) or a reporter precursor (claim 64). If Applicants elect the reporter, Applicants must elect one of the reporters listed in claim 63. If Applicants elect the reporter precursor, Applicants must elect one

of the reporter precursors listed in claim 64.

Applicants are required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

The following claim(s) are generic: 1, 10, 21, 35 and 62.

The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons. Each product species has a different structure and different biological and chemical properties. Each method species is a different step or set of steps, each of which uses different reagents and has a different function and a different effect. Because the claimed species are not art-recognized equivalents, a holding of lack of unity of invention is proper.

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or otherwise include all the limitations of the patentable product** will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be

rejoined. See "Guidance on Treatment of Product and Process Claims in light of In re Ochiai, In re Brouwer and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROSANNE KOSSON whose telephone number is (571)272-2923. The examiner can normally be reached on Mon., Tues., Fri., 8:30-6:00, Thurs., 8:30-2:00, Wed. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert B. Mondesi, can be reached on 571-272-0956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rosanne Kosson/
Examiner, Art Unit 1652
2010-11-08